

WHAT WE CLAIM IS:

1. A colloidal crystal preparation process,  
wherein compressed air pulses are generated by control of  
a compressed gas, and then guided to a colloidal crystal  
5 preparation vessel having a flat plate type capillary  
portion to produce a pressure fluctuation therein, which  
is used as driving power, thereby giving a flow and hard-  
stopping motion to a colloidal solution in said flat plate  
type capillary for formation of colloidal crystals of good  
10 single crystallinity.

2. A process of preparation of a colloidal  
crystal gel having good single crystallinity, wherein  
subsequent to said step of forming colloidal crystals of  
good single crystallinity as recited in claim 1, a step of  
15 gelating the formed colloidal crystals is applied.

3. A colloidal crystal preparation system,  
comprising compressed gas feeder means, gas pulse  
formation means for producing a compressed gas as short-  
time gas pulses, and a colloidal crystal preparation  
20 vessel having a flat plate type capillary portion for  
formation of colloidal crystals.

4. A colloidal crystal gel preparation system,  
comprising compressed gas feeder means, gas pulse  
formation means for producing a compressed gas as short-  
25 time gas pulses, a colloidal crystal preparation vessel  
having a flat plate type capillary portion for formation  
of colloidal crystals, and gelation acceleration means.